

Preconditioned Spectral Clustering of Signed Graphs

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Classical spectral clustering is based on a spectral decomposition of a graph Laplacian, obtained from a graph adjacency matrix representing positive graph edge weights describing similarities of graph vertices. In signed graphs, the graph edge weights can be negative. We propose and test preconditioned spectral clustering of signed graphs using the standard or signed Laplacians, utilizing the hyper parallel implementation of algebraic multigrid BoomerAMG for Locally Optimal Block Preconditioned Conjugate Gradient (LOBPCG) BLOPEX implementation in SLEPc/PETSc.

References: Andrew V. Knyazev, Signed Laplacian for spectral clustering revisited, arXiv:1701.01394

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